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ABSTRACT

Accompanying rising affluence has been a gradual, consistent decline in reported levels of happiness. Crime rates, drug addiction, violence, and alienation show widespread dissatisfaction with aspects of life. Quality of life should therefore not be measured solely in terms of material wealth; psychological indicators should also be used. Data collected from 1,630 rural household heads (1,218 white, 369 black, 43 American Indian) in eight Southern states studied the nature of this relationship between objective and subjective quality of life measures. The study included three indexes: (1) an Objective Family Quality of Life covering socioeconomic status, leisure-time activity participation, and a level of living scale; (2) a Subjective Family Quality of Life showing satisfaction of the household head with his residence, income, and his perception of changes in his family situation; (3) a Subjective County Quality of Life measuring perception of changes in county economic opportunities, government, and services. Findings indicated mild positive correlation between objective and subjective family quality of life indices and between subjective family and subjective county quality of life indices. With the exception of white respondents, no relationship was found between objective family and subjective county quality of life indices. Lack of strong correlation suggests the inadvisibility of substituting one index for the other. (DS)

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OBJECTIVE AND SUBJECTIVE QUALITY OF LIFE INDICATORS: AN EXPLORATORY ANALYSIS

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In practically all aspects of life the United States has long been used as a standard for success. For many years, American society has been known, and criticized, for its affluence. However, as impressive as this material wealth is, the nationwide trend in reported level of happiness in the U.S. shows a gradual consistent decline (Campbell et. al., 1976:26). Many social scientists attribute this decline to the numerous social problems which have accompanied the rising affluence, for example, crime, drug addiction, civil disorder, violence, environmental pollution, alienation, and widespread dissatisfaction with aspects of life (Hobbs, 1970; Sheldon and Moore, 1968; Gross, 1969; Liu, 1973, 1974, 1975; Campbell et. al., 1976; and Ringen, 1976). This points the way to an important question: Can quality of life be measured in terms of material wealth? Or in Rostow's (1967) terms: Does the stage of high mass consumption signify a high quality of life?

The importance of the quality of life problem has not only been noted by social scientists but also by many politicians including Johnson, Nixon, Ford and Mondale. Furthermore, policy makers who presume to define national goals are increasingly emphasizing the subjective aspects of life over material gains. It can be seen that con-

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sideration of the environment, education, individual satisfactions and other factors which shape the qulaity of life of the individual are now considered important requirements in many public policy decisions.

Studies dealing with the relationship between objective and subjective measures of quality of life yield mixed findings. According to Stagner, effective use of psychological indicators (subjective measures of quality of life) will require that they be analyzed in relation to the objective data already available (1972:59). That is, indices of satisfaction are needed but these must be interpreted in the light of other data. Campbell maintains that the correspondence between the two measures are rather weak in some instance (1972:442). Likewise, Coleman, studying four Kentucky mountain counties, suggests that objective indicators might be only loosely, if at all, related to how people feel about their living situation (1975:1). Rojek et al (1975), studying four rural Illinois counties, found low correlations between subjective and objective measures of quality of life in the areas of medical, educational and commercial services. Schneider (1976), after studying 15 of the largest U.S. cities, also concludes that there is little congruence between objective and subjective quality of life measures.

Several researchers, on the other hand, find positive relationships between objective and subjective measures of quality of life. For example, Coughenour notes that improvement in per capita income and other objective measures translates into an improvement in perceived quality of life in four Kentucky counties (1976:1). Frese, examining data from open country residents in Mississippi (forthcoming), finds that objective and subjective measures of changes in quality of life, in general,

show similar trends. McGranahan, et. al., (1975:31,45) in their study of community services in southwestern Wisconsin obtain moderate to high correlations between objective and subjective measures of community services, retail services, police protection and ambulance services. However, they get low or no correlations between objective and subjective ratings of schools and sewage treatment systems. Christenson (1977), studying respondents in 100 North Carolina counties, notes a strong positive relationship between community satisfaction and the quality and availability of services. Dillman and Tramblay (1977:115) support a high degree of congruence between objective and subjective quality of life indicators when they state that "...rural people's subjective assessments are strikingly consistent with the objective conditions of their envioronment."

Purpose

Due to the indecisive nature of the results reported in the literature, this paper further explores the degree of congruence between objective and subjective quality of life measures using data collected from rural household heads in eight Southern states. More specifically, we will examine the relationship between objective and subjective family quality of life indicators and then compare each one of these to a subjective county quality of life indicator. The importance of exploring the relationship between objective and subjective quality of life indicators has been pointed out by Campbell et al , "...the central issue confronting any examination of the perceived quality of life involves the relationship between subjective and objective indicators of well-being" (1976:474). This notion is supported by Schneider (1976),

Coleman (1975), Coughenour (1976), Stagner (1972), and Liu (1975).

The Data

The data used in this paper are taken from the S-79 regional research project, entitled "Rural Development and Quality of Life in the Rural South." In the S-79 study, two thousand six hundred and twenty-eight respondents (household heads or homemakers) in thirty-two counties in eight Southern states were interviewed during 1972-73. In this analysis we include only the household heads reducing our sample to 1630. Of the 1630 household heads, 1218 were white, 369 black and 43 American Indians.

An area sampling procedure was employed to obtain the sample of households to be interviewed. The thirty-two counties were divided into small-area sample segments.* Next, a random selection of the small-area segemnts was obtained and within these segments a random sample of households was drawn. The number of households sampled in each segment was determined by a quota system set forth in the S-79 guidelines.** The states participating in the S-79 project were Alabama, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, and

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*These counties had been selected for the S-44 project, a predecessor of the S-79 project, because they were either substantially or seriously low income in 1950. The segments (but not necessarily the households) within the counties, were the same ones used in the S-44 study. For a more detailed discussion of the sampling design, see "Sample Design for the Regional Rural Sociology Project, S-44," unpublished paper, Department of Statistics, North Carolina State University, Spring 1960.

**For further information on the sampling procedure, see, for example: A.L.Coleman, et al , "Rural Development and the Quality of Life in Harlan, Perry, Whitley and Wolfe counties: Summaries of Data from Surveys of Households in 1961 and 1973," mimeographed papers, Department of Sociology, University of Kentucky, December, 1973.

Tennessee.

For this paper, missing values were replaced with random numbers generated to conform to the distribution (mean and standard deviation) of the obtained values for each variable. Missing values ranged from a low of less than one-half of one percent to a high of 18 percent, the latter being unusual in that most of the variables had less than six percent of their values missing.

Operationalization of the Variables

The operational scheme for the concepts in this study is as follows:

I) Objective Family Quality of Life (OFQOL)

This index was constructed by principle component factor analysis without rotation using the following items: a household's socioeconomic status, level of living items possessed, and leisure time participation, Each of these three OFQOL index items are in turn made up of more than one indicator. Socieoconomic status, the level of living scale and the leisure time participation item were operationalized in the following manner:

1) Socioeconomic Status (SES)

Socioeconomic status scores were derived by converting the years of ecucational attainment of the household head, the family income, and the occupational prestige score of the household head into the U.S. census scoring procedures and computing an average score for each household. The census procedure converts each of the three SES indicators to a scale ranging from 0 to 100 making it pos-

sible to combine the items into one index. (For a detailed discussion of this procedure see U.S. Census, 1963 or Robinson, et. al., 1969:357-358.)

2) Leisure-time Activity Participation (LEISURE)

Each respondent's leisure-time participation intensity score takes into account how frequently he(she) participates in various leisure time activities, whether or not he owns his own equipment, if he subscribes to magazines dealing with his leisure time activities and if he is a member of or holds an office in a club or group devoted to his leisure time persuits. The activities included in this index are:

a. hunting and/or fishing
b. camping, boating and similar activities
c. indoor activities (e.g., T.V. viewing, reading, arts and crafts)
d. outdoor activities (gardening, sight seeing, bicycling, etc.)
e. participatory activities (golf, pool, bowling, tennis, etc.)
f. spectator activities*
g. neighborhood and community activities*
h. informal social activities*
i. formal associations*

The scoring procedure for each of the above items was to assign from 0 to 4 points for various levels of participation (0 for "never", 1 for "seldom", 2 for "occassionally", 3 for "fairly often" and 4 for "very often"); 0.5 points were added if the respondent owned his own equipment, 0.5 points if he subscribed to a related magazine; in addition, a respondent received one point if he was a member and two

*Only frequency of participation was asked regarding these activities.

additional points if he was an officer in an organized club or group dealing with his leisure time activity. After the total for each of the above areas (a through i) was obtained, they were summed to obtain a respondent's leisure-time participation intensity score. The theoretical range of this score is from 0 to 56.

3) Level-of-living Scale (LOL)

The level-of-living scale was developed using Guttman scaling techniques on the 28 household items included in the S-79 interview schedule. The results yielded the scale reported in Table 1. The coefficient of reproducibility for this scale is .96, while the coefficient of scalability is .79. Each respondent was assigned the appropriate scale score.

II) Subjective Family Quality of Life (SFQOL)

This index is made up of three subjective indicators of family quality of life, namely, how satisfied the household head is with his(her) residence, income, and his perception of the change in his family situation in the last ten years.* Principle component factor analysis without rotation was used to develop the index and obtain factor scores for each respondent.

The residential item asked the respondent how satisfied he was with his present residence. Family income satisfaction

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*Because this data was not available for Louisiana respondents, the number of respondents for the SFQOL variable was reduced to 1141. Pairwise deletion was used throughout our correlation procedures.

was in reference to the change which had occured during the past 10 years. These three items had SFQOL factor loadings of .73, .74 and .40 respectively.

III) Subjective County Quality of Life (SCQOL)

This index measures each respondent's perception of changes in three dimensions of quality of life in his county of residence in the past 10 years. Since these questions refered to the last 10 years, when using subjective county quality of life we will include in our analysis only those respondents who have lived in their county of residence for "most" of the 10 years prior to being interviewed. This reduces the number of respondents from 1630 to 1415.

The three dimensions of perceived change in quality of life consist of county economic opportunities, county government, and services in the county. The SCQOL score is the unweighted summation of a respondents score on each of these three dimensions. Each dimension is in turn the unweighted sum of several items measuring perceived change in that area of quality of life.

The three dimensions, economic opportunity, county government, and county services were obtained by factor analyzing 23 items dealing with perceived changes in the respondent's county of residence. The results of a principle component factor analysis with orthogonal rotation (excluding those items not loading heavily on any one factor) are presented in Table 2. For each of the items included in Table 2 the respondents were asked if in the last 10 years their county had improved, remained about

the same, or gotten worse. Index scores for each of these dimensions were then assigned to each respondent using the unweighted sum of the items. It was these three index scores that were summed to obtain each respondent's overall SCQOL score. Unweighted summations were used through out the SCQOL index construction procedure because the results correlated extremely high (.99 or higher) with the results obtained using weightings derived from the principal component factor analyses.

Findings

In this section the degree of congruence between objective and subjective quality of life indicators is explored using zero order correlation coefficients. Table 3 contains the correlation coefficients between the objective family quality of life index, the subjective family quality of life index and the subjective county quality of life index for the total sample as well as white, black, and Indian respondents.

For the total sample the results in Table 3 show a positive association between two of the three quality of life indicies. That is, there are significant positive correlations between 1) the subjective and objective indices of family quality of life and 2) the subjective family quality of life index and the subjective county quality of life index. On the other hand, there is no relationship (r=.000) between the objective family quality of life index and the subjective county quality of life index. Black respondents show a similar trend in that there are significant positive relationships between OFQOL and SFQOL and between SFQOL and SCQOL, while there is no relationship (r=-.005) between OFQOL and SCQOL.

White respondents show significant positive correlations between all three qulaity of life indices. Although the OFQOL-SCQOL correlation is statistically significant its magnitude is rather low. It is interesting to note that the magnitude patterns of the correlation matrices are the same for the total sample as well as for black and white respondents.

None of the correlation coefficients between the three quality of life indices are statistically significant for the Indian respondents. The magnitude trends of the coefficients is similar to those for the total population, black respondents and white respondents. It is interesting to note the sign reversal for the SFQOL-SCQOL correlation coefficient. Our findings for Indian household heads should be considered highly tentative since there were only 43 Indians in the S-79 sample with most (41) of them residing in one North Carolina county.

Conclusion

Given the indecisive results reported in the literature, this paper attempted to gain additional insights into the nature of the relationship between objective and subjective quality of life measures. After developing three qulaity of life indices (OFQOL, SFQOL, SCQOL) their degree of congruence was examined. For the total sample, as well as the black and white subgroups, our findings show: 1) a positive, although not high (.3 to .4), correlation between the objective and subjective family quality of life indicies; 2) a mild (.15 to .25) positive relationship between the subjective family and subjective county quality of life indicies; and 3), with the exception of white respondents, no relationship between the objective

family and subjective county quality of life indicies. The results for American Indian household heads show no statistically significant relationship between any of the three quality of life indicators. This latter finding should be considered highly tentative because, as pointed out earlier, there were only 43 Indians respondents, furthermore, 41 of these resided in one North Carolina county.

Since our results, using southern rural household respondents, indicate at best a mild positive (less .40) relationships between the objective and subjective family quality of life indicies examined; it seems inadviseable to use one index as an indicator of (or substitute for) the other, Furthermore, our findings deem it inadvisable to use either of the family quality of life indicies as an indicator of subjective county quality of life (or vice versa).

Suggestions for future research include the development of an objective county quality of life index and examining its relationships to subjective county and family as well as objective family quality of life indicies. More sophisticated quality of life scales would also make an invaluable contribution to social scientists working in this area.

Table 1

Level of Living Scale

Scale Score	Item	N Scale Types	% Owning Item	Errors
10	Dishwasher	77	8	53
9	Air Conditioner	372	30	83
8	Vacuum Cleaner	470	57	87
7	Hot Water Heater	253	75	56
6	Bath or Shower	63	75	10
5	Inside Flush Toilet	57	76	5
4	Piped Water	62	83	21
3	Kitchen Sink	82	85	9
2	Gas or Electric Range	130	94	6
1	Mechanical Refrigerator	50	98	0
0	(None of the above items)	14		

N = 1630

Table 2

Factor Loadings for the
Subjective County Quality of Life Indicators

	Factor Loadings		
	F_1 economic (opportunities)	F_2 (government)	F_3 (services)
Politics and political parties	.101	.785	.041
County government	.122	.786	.107
Crime and law enforcement	.093	.586	.143
Real income	.587	.083	.060
Job opportunities	.731	.088	.049
Opportunities for the young	.608	.029	.286
Opportunities for blacks	.575	.026	.040
County as a place to live	.604	.200	.117
Public school	.104	.237	.687
Medical care and health services	.195	.012	.661
Welfare programs	.077	.086	.679
Common Variance	38.7%	32.4%	28.8%
Total Variance	18.4%	15.4%	13.7%
Eigenvalue	2.02	1.69	1.51

Table 3

Correlation Coefficients for Subjective and Objective Quality of Life Indices

Total Sample (above the diagonal) and Blacks (below the diagonal).

	OFQOL	SFQOL	SCQOL
OFQOL	----	.385**	.000
SFQOL	.317**	----	.165**
SCQOL	-.005	.250**	----

Whites (above the diagonal) and Indians (below the diagonal).

	OFQOL	SFQOL	SCQOL
OFQOL	----	.364**	.097**
SFQOL	.281	----	.207**
SCQOL	.060	-.156	----

** Significant at the .01 level

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